

ABSTRACT

Cells with forced expression of swine Toll-like receptor 9 (TLR9) are prepared by cloning a TLR9 gene from swine intestinal Peyer's patches. Functional analysis on CpG DNAs using the above cells revealed that swine TLR9 shows a higher recognition ability for a human CpG DNA motif (CpG2006) than for a mouse-specific CpG DNA motif (CpG1826). When the mRNA expression levels in various tissues are compared by the real-time PCR method, it is found out that the mRNA is expressed in Peyer's patches and mesenteric lymph nodes, which play important roles in the intestinal tract immune system, at a level thrice as much as in spleen or more. Thus, the cells that are forced to express an intestinal tract tissue-expressed TLR (for example, TLR9) can be used to identify samples capable of activating the intestinal tract immune system.